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E-module Design of Sport Modification and Cybergogy-based Small Games

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***Abstract*---**The low learning outcomes of students in the subject of modification of sports and small games are considered as the problem in this research that is mostly caused by the lack of learning media facilities for students in the online classes that leads them to difficulty in understanding the provided learning materials. This study aims to develop an e-module on the subject of modification of sports and small games. The ADDIE development model is being used in this Research and Development (R&D). There are several activities needed as the research method, such as exploring the potential and actual problems, collecting all information by developing, validating, revising, conducting trials and errors of the game models for the effectiveness and efficiency of the model used. The results of the study showed from the experts of materials that at the development stage and the level of validity by the score of 3.60 which was in the highly valid by the percentage of 90.5%. From the media experts validation by the score of 3.65 which was high valid category by the percentage of 92, 55%.

***Keywords*---**cybergogy, digitalization, e-module, games, modification.

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Introduction

The increasing use of communication and information technology in all aspects of life, including in the education field is considering the movement of the 21st-century world (Siddiq et al., 2020). Thus, the Internet is being optimally used in learning activities as the benefit of technology. The massive use of communication and information technology in the industrial revolution era by Generation Z can be applied as the teaching-learning approach which is known as the Cybergogy. It can be concluded that the demands of this era are taken as a challenge for the teaching-learning process to be applied from basic to the highest education program and Cybergogy-based learning is the solution. However, moving from the conventional method to the modern one is hardly chosen by many lecturers nowadays. Based on research, one of the factors that keep the lecturers in the old ways is the lack of facilities in teaching-learning (Pramana et al., 2020). In the COVID-19 pandemic where the online class is the only choice, the implementation of Cybergogy-based learning, especially at the Faculty of Sports Science can be advantageous for the lecturers and students in practical courses with blended learning. One of the courses is the modification of sports and small games which is mostly aimed as a general warm-up before doing sports activities in particular.

The course modification of sports and small games is a compulsory subject of three (3) credits with learning outcomes that students can modify a sport or more in the form of games, and to practice on a large or small scale. The modification is needed in learning to adjust the immaturity of the students physically and emotionally. When it is compared to adults, the students frequently find difficulty in using adult tools and rules which generate less motivated learning. The modification of tools and regulations allows students to develop their strengths and participation in encouraging them to work together and feel happier. In sports modification, four elements must be considered by the teacher, namely: 1) modification of the size of the field; 2) equipment modification; 3) modification of the length of the game; and 4) modification of the rules of the game. Changing the size of the field and playing time aim to reduce the physical demands of students. Modification of equipment includes bats, rackets, and sticks that are made in small sizes will allow students to use them easier. Likewise, the size and composition of the ball are modified to make students more comfortable while using it, for example, Aussie Sports designs children-friendly use volleyball made from the best materials. It can be said that teachers' creativity is needed in designing tools for learning (Muresan, 2014; Muresan, 2013; Hadlow et al., 2018).

Furthermore, the effectiveness of sports modification in learning can be concluded as follows: 1) Increasing the motivation and enjoyment of students in physical education learning at school; 2) Improving student learning activities; 3) Improving physical education learning outcomes of students; and 4) Aiding in the lack of facilities and infrastructure related to throwing and catching the ball, the development of strength and physical fitness components. By the analytical experience, the physical education teachers can improve the physical education learning materials for practical subjects that provide the class with more ideas in teaching-learning processes (Sorger, 1989; Balakrishnan & Griffiths, 2018).

E-modules are teaching materials packaged digitally to facilitate teachers and students in learning that are systematically arranged so that students can learn independently and solve existing problems (Asrial et al., 2020; Citrawathi et al., 2016; Diantari et al., 2018; Udayana et al., 2017). In addition, by research, it is known that e-modules can improve student learning outcomes by supporting the learning processes (Wirawan et al., 2017). Also, Aryawan (2018), states that interactive electronic modules can be used to significantly improve student learning outcomes. It can be said that e-modules have the main role for online teaching-learning processes with some benefits;) interactively used by students in digital platforms; 2) supporting learning materials with video audio, animation, pictures, texts, and tests as direct feedback (Sugihartini & Jayanta, 2017). Also, the e-module can be used as one of the best alternatives to improve the understanding and the learning outcomes of the students (Hastari et al., 2019). In conclusion, the e-module of Cybergogy-based sports and small game modification courses can be the best alternative method for students, especially in online classes.

The Cybergogy is a learning strategy that involves students learning digitally/online connected to the network that makes it easier for teachers and students to keep the situation more relevant and interesting without being limited by such as curriculum, schedule, and classrooms (Yusron, 2018). The Cybergogy approach is applied independently of time and location by adapting students' needs about their access to the internet where access to complete and heterogeneous material can be achieved (Ocaña-Fernández et al., 2020). Furthermore, Sumarsono (2020), states that the Cybergogy also facilitates learning through the communities where students actively express opinions and find solutions. The Cybergogy learning strategy model can be used for the advancement of cognitive, emotive, and social factors as mentioned by Mishra & Koehler (2006), such as task vision, assessment, learning model, learning context, grouping, teacher role, and student role as indicators of engaged learning. Also, it recognizes as an innovative learning strategy model for learning by using ICT as in the following example:

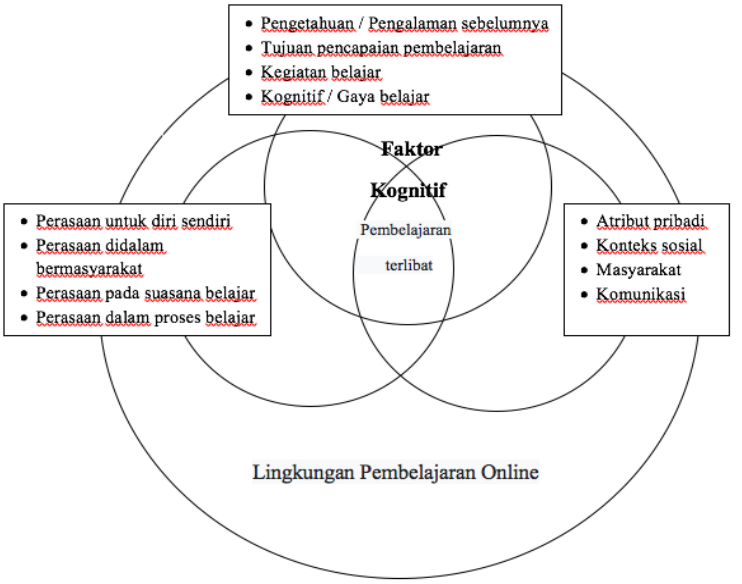

Figure 1. The cybergogy used in online learning (in Indonesia) (Mishra & Koehler, 2006)

Figure 1 shows several engagement forms of online learning strategies, indicators, and ways to assess the learning. The Cybergogy learning strategies engage students to be more active in cognitive, emotive, and social domains. For example, it can be used in exploring the students' emotional cues, fostering positive feelings, increasing students' self-confidence, and arousing their curiosity through the design of special, building a supportive learning environment (Wang & Kang, 2006).

Method

The Research and Development (R & D) is the research method that starts with an activity to be observed and developed to finally bring life innovation. This research activity is obtaining information about the needs of users and developing activities to produce learning products. The flow chart in this development research can be seen as follow: 1) Understanding the object of research by conducting preliminary research by interviews and questionnaires to identify problems, learning sources, and motivation of the students; 2) Developing a model by observing the learning process (preparation, implementation, and evaluation) as well as the participation of the students. At this stage, the developed model will be discussed with professional experts to provide direct feedback from the basic ideas to complex implementation; and 3) Testing the model by using questionnaires and test equipment to check the effectiveness and to evaluate the learning process and results. At this stage, revisions, changes, and subtractions are taken as well as additional items if needed depending on the trial and errors stages (Baranov et al., 2021; Peter, 2015; Rivas et al., 2021).

Results and Discussions

The results of Research & Development in the form of e-modules for modification of sports and small games using Cybergogyis improving the learning strategies for students. The feasibility assessment of the module will be developed on practical material with a focus on validity and practicality which is carried out by media experts and material and practicality tested to the students (Boendermaker et al., 2015; Hendriarto, 2021; Widana et al., 2020). In this research, the ADDIE development model consists of the stages of Analysis, Design, and development which is easy to apply with structured steps and evaluation sessions.

- Need Analysis Stage: At the needs analysis stage, the discussion with the teaching team and students related to the material for sports modification courses and Cybergogy-based small games was the first step to observe the design of e-module based on the needs in teaching-learning. Thus, it was found that the modifications would be regarding; 1) big ball games such as volleyball, football, basketball; 2) small balls games such as rounders, badminton, softball, table tennis; 3) athletic sports; 4) rhythmic gymnastics; 5) floor exercises; 6) games for physical fitness; 7) games for self-defense; and 8) activities in the water.
- Designing Stage: At this design stage, the researchers facilitated all of the results of the needs analysis observation to provide solutions to the problems by the Cybergogy-based e-module using the Kvisoft Flipbook Maker application as the framework before developing the product. This stage aims to produce the finest teaching materials which relate to the needs of teachers and students to finally achieve the learning outcomes. The components of the e-module are the book cover, the preface, the table of contents, the instructions for using the e-module, the introduction, the learning materials (theories and game models), and the formative tests of each material designed, and designed game models video. The following is a storyboard for the modified sport and small game based on Cybergogy learning.
    - The e-module book cover is designed to attract readers which consist of module title, author identity, picture, and institutional identity.

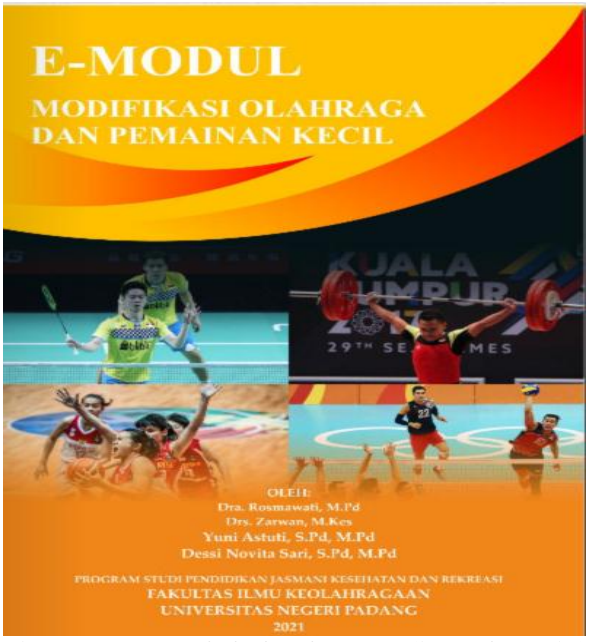

Figure 2. E-Module book cover (in Indonesia)

- The preface is a leading introduction sentence to the table of contents.

KATA PENGANTAR

Alhamdulillah Penulis ucapkan Kehadirat Allah SWT yang telah memberikan pengetahuan, kekuatan dan kemampuan dalam berfikir untuk menulis sebuah e-modul modifikasi olahraga dan permainan kecil. E-modul ini merupakan sebuah karya ilmiah yang disusun untuk dapat digunakan oleh mahasiswa olahraga, guru pendidikan jasmani olahraga dan kesehatan serta para dosen pengampu matakuliah modifikasi olahraga dan permainan. Penulis menyadari bahwa karya ilmiah berupa e-modul ini masih jauh dari kesempurnaan, oleh sebab penulis mengharapkan kritik dan saran dari para pembaca untuk bahan evaluasi dan perbaikan dalam penyusunan e-modul ini pada edisi revisi nantinya. Proses penulisan e-modul ini penulis banyak sekali mendapatkan masukan, arahan, dan bimbingan dari berbagai pihak. Oleh sebab itu penulis menyampaikan ucapan terimakasih yang tidak terhingga kepada seluruh pihak. Semoga Allah memberikan imbalan yang setimpal kepada seluruh pihak yang sudah memberikan saran dan masukan dalam penulisan e-modul ini. Aamiin... Ya Rabbal Alamin

Padang, Agustus 2021

Penulis

Figure 3. The preface (in Indonesia)

- The Table of Contents as readers' guidance for the e-module.

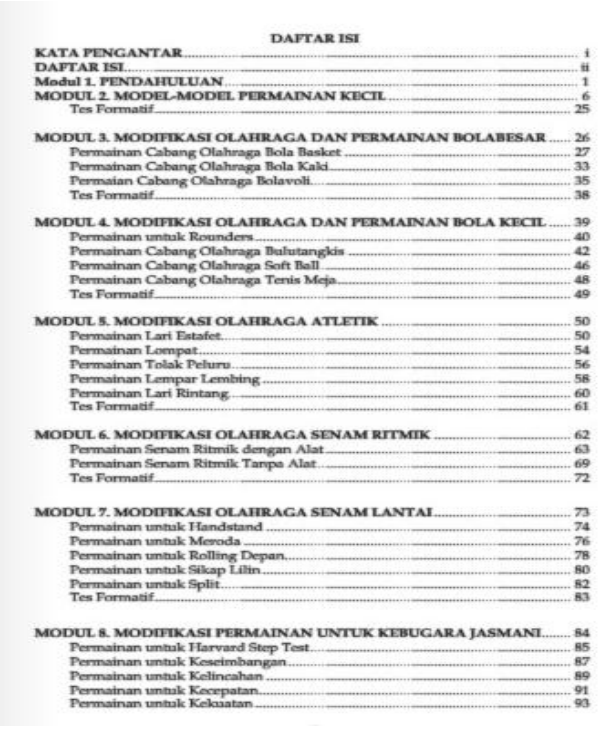

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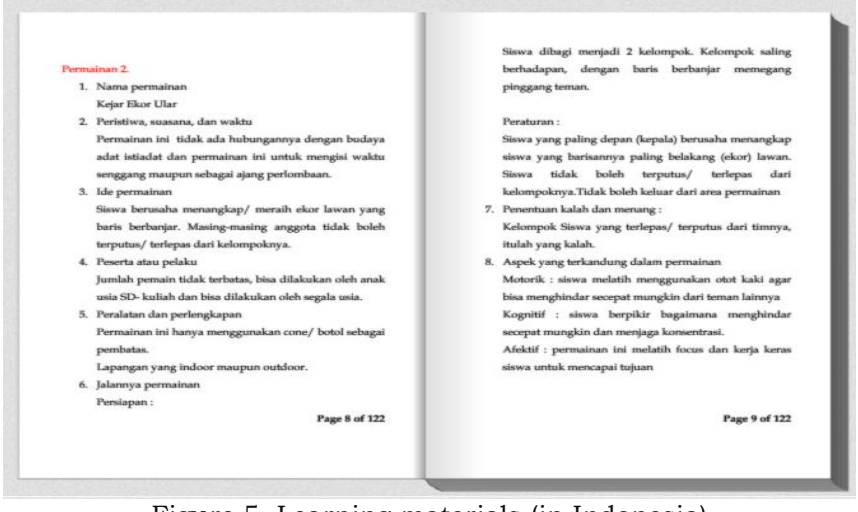
Figure 4. The table of contents (in Indonesia)

- Cybergogy-based learning materials for sports and small games modification courses consist of the title and the description of the material.



Permainan 2.

1. Nama permainan
   Kejar Ekor Ular
2. Peristiwa, suasana, dan waktu
   Permainan ini tidak ada hubungannya dengan budaya adat istiadat dan permainan ini untuk mengisi waktu senggang maupun sebagai ajang perlombaan.
3. Ide permainan
   Siswa berusaha menangkap/ meraih ekor lawan yang baris berbanjar. Masing-masing anggota tidak boleh terputus/ terlepas dari kelompoknya.
4. Peserta atau pelaku
   Jumlah pemain tidak terbatas, bisa dilakukan oleh anak usia SD- kuliah dan bisa dilakukan oleh segala usia.
5. Peralatan dan perlengkapan
   Permainan ini hanya menggunakan cone/ botol sebagai pembatas.
   Lapangan yang indoor maupun outdoor.
6. Jalannya permainan
   Persiapan :

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Siswa dibagi menjadi 2 kelompok. Kelompok saling berhadapan, dengan baris berbanjar memegang pinggang teman.

Peraturan :
Siswa yang paling depan (kepala) berusaha menangkap siswa yang barisannya paling belakang (ekor) lawan. Siswa tidak boleh terputus/ terlepas dari kelompoknya.Tidak boleh keluar dari area permainan

7. Penentuan kalah dan menang :
   Kelompok Siswa yang terlepas/ terputus dari timnya, itulah yang kalah.
8. Aspek yang terkandung dalam permainan
   Motorik : siswa melatih menggunakan otot kaki agar bisa menghindar secepat mungkin dari teman lainnya
   Kognitif : siswa berpikir bagaimana menghindar secepat mungkin dan menjaga konsentrasi.
   Afektif : permainan ini melatih focus dan kerja keras siswa untuk mencapai tujuan

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Figure 5. Learning materials (in Indonesia)

- The video of modified game types for sports and small games is based on the material listed in the needs analysis stages.

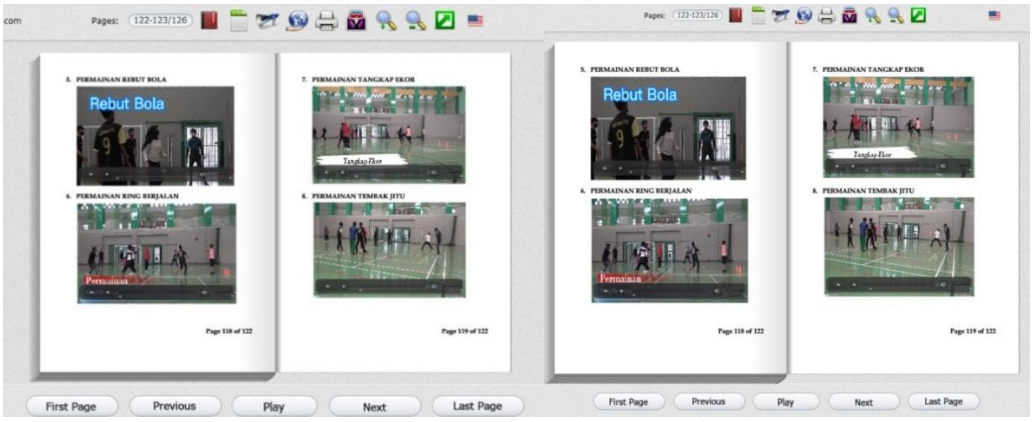

Figure 6. Games model video (in Indonesia)

- The references as the source of information used by the researchers to develop the e-modules

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Figure 7. References (in Indonesia)

- Development Stage: At this development stage, the researcher started to design the e-module based on Cybergogy using the kvisoft flipbook maker application. Then, it would be legalized to assess and measure the validity and practicality of the designed product. Validation was carried out by material experts with two lecturers of the subject with the finding of the average score of 3.60 with the valid category for field testing (Mäkiö-Marusik et al., 2019; Reinhold et al., 2021). The last, the validation by media experts with 2 experts in the field of technology found the average score of 3.70 with the high valid category for field testing.

- Implementation: After the product validity, the e-module for modification of sports and small games based on Cybergogy is now ready to be tested to the students with the courses to find out responses by providing a questionnaire in the form of statements. As the result, it was found the average score of the e-module is 3.60 with the criteria or interpretation as "very interesting". It can be understood that this modification sports and small games e-module are very interesting for online classes (Zu, 2021; Hulla et al., 2019; Forma & Matyjas, 2015).
- Evaluation: At this evaluation stage, assessment and evaluation are the final stages to check the testing result of modified sports and small game e-modules by detailing the effectiveness of the availability of these modules.

Conclusion

Based on the results of the Cybergogy-based sports and small game modification e-module development using the Kvisoft Flipbook Maker application with the ADDIE model has reached the development stage. The level of validity of the e-module was obtained from; a) the material experts by the score of 3.60 which is in the high valid category with a percentage of 90.5%, b) the media experts by the score of 3.65 which is in the high valid category with a percentage of 92.55%. Meanwhile, the responses from students who were tested by the product obtained a score of 3.85 which is a highly attractive category with a percentage of 94.85%. It can be concluded that students are very motivated to take online lectures and to study independently with this Cybergogy-based e-module.

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